CLAIMS (38)

1. Method for conveying resistance to beet necrotic yellow vein virus (BNYVV) to a sugar beet plant, comprising the following steps:

(a) preparing a DNA fragment of at least 15 nucleotides in a sequence that is at least 70% homologous to the corresponding nucleotide sequence of the genomic RNA 1 of the beet necrotic yellow vein virus (BNYVV),

(b) introducing said DNA fragment, operately linked to a promotor that is active in sugar beet plants, into a sugar beet plant cell to obtain a transformed sugar beet cell; and

(c) regenerating a transgenic sugar beet plant from the transformed sugar beet plant cell.

2. Method as claimed in claim 1, wherein the DNA fragment is at least 80%, preferably at least 90%, more preferably at least 95% homologous to the corresponding nucleotide sequence of the genomic RNA 1 of said virus.

3. Method according to claim 1 or 2, characterized in that the fragment has a nucleic acid sequence that corresponds with the homology indicated in claims 1 and 2 to nucleotides 153 to 3258 of RNA 1 of said virus.

4. Method according to claim 1 or 2, characterized in that the fragment has a nucleic acid sequence that corresponds with the homology indicated in claims 1 and 2 to nucleotides 169 to 539 of RNA 1 of said virus.

5. Method according to claim 1 or 2, characterized in that the fragment has a nucleic acid sequence that corresponds with the homology indicated in claims 1 and 2 to nucleotides 1226 to 1683 of RNA 1 of said virus.

6. Method according to claim 1 or 2 characterized in that the fragment has a nucleic acid sequence that corresponds with the homology indicated in

claims 1 and 2 to nucleotides 2754 to 3192 of RNA 1 of said virus.

7. Method according to claim 1 or 2 characterized in that the fragment consists of 6746 nucleotides.

8. Method as claimed in claims 1-7 characterized in that the fragment is introduced into the cell by means of a DNA vector harboring the fragment and transcription and translation regulatory sequences operably linked therewith.

9. Transformation vector for conveying resistance to BNYVV to a plant, harboring a fragment of at least 15 nucleotides in a sequence that is at least 70% homologous to the corresponding nucleotide sequence of the genomic RNA 1 of said virus, and transcription and translation regulatory sequences operably linked therewith.

10. Vector as claimed in claim 9, wherein the fragment is at least 80%, preferably at least 90%, more preferably at least 95% homologous to the corresponding nucleotide sequence of the genomic RNA 1 of said virus.

11. Vector according to claim 9 or 10, characterized in that the fragment has a nucleic acid sequence that corresponds with the homology indicated in claims 9 and 10 to nucleotides 153 to 3258 of RNA 1 of said virus.

12. Vector according to claim 9 or 10, characterized in that the fragment has a nucleic acid sequence that corresponds with the homology indicated in claims 9 and 10 to nucleotides 169 to 539 of RNA 1 of said virus.

13. Vector according to claim 9 or 10, characterized in that the fragment has a nucleic acid sequence that corresponds with the homology indicated in claims 9 and 10 to nucleotides 1226 to 1683 of RNA 1 of said virus.

14. Vector according to claim 9 or 10, characterized in that the fragment has a nucleic acid

sequence that corresponds with the homology indicated in claims 9 and 10 to nucleotides 2754 to 3192 of RNA 1 of said virus.

15. Vector according to claim 9 or 10, characterized in that the fragment consists of 6746 nucleotides.

16. Use of a vector as claimed in claims 9-15 for the transformation of a plant cell.

17. Plant cell, exibiting a resistance to BNYVV, comprising in its genome a DNA fragment of at least 15 nucleotides in a sequence which is at least 70% homologous to the corresponding nucleotide sequence of the genomic RNA 1 of said virus.

18. Plant cell as claimed in claim 17, wherein the fragment is at least 80%, preferably at least 90%, more preferably at least 95% homologous to the corresponding nucleotide sequence of the genomic RNA 1 of said virus.

19. Plant cell according to claim 17 or 18, characterized in that the fragment has a nucleic acid sequence that corresponds with the homology indicated in claims 17 and 18 to nucleotides 153 to 3258 of RNA 1 of said virus.

20. Plant cell according to claim 17 or 18, characterized in that the fragment has a nucleic acid sequence that corresponds with the homology indicated in claims 17 and 18 to nucleotides 169 to 539 of RNA 1 of said virus.

21. Plant cell according to claim 17 or 18, characterized in that the fragment has a nucleic acid sequence that corresponds with the homology indicated in claims 17 and 18 to nucleotides 1226 to 1683 of RNA 1 of said virus.

22. Plant cell according to claim 17 or 18, characterized in that the fragment has a nucleic acid sequence that corresponds with the homology indicated in claims 17 and 18 to nucleotides 2754 to 3192 of RNA 1 of said virus.

20

23. Plant cell according to claim 17 or 18, characterized in that the fragment consists of 6746 nucleotides.

24. Plant cell as claimed in claims 17-23 being part of a sugar beet plant that is resistant against BNYVV.

25. Use of a plant cell as claimed in claims 17-23 for the regeneration therefrom of a sugar beet plant that is resistant against BNYVV.

26. Sugar beet plant, exhibiting a resistance to BNYVV, consisting at least partly of plant cells as claimed in claims 17-23.

27. Progeny of a sugar beet plant as claimed in claim 26.

28. Seeds of a sugar beet plant as claimed in claim 26.

29. Vegetatively reproducible structures, such as calluses, buds, embryos, from a plant according to claim 26 or progeny according to claim 27.

add A4